

Amendment and Response

Applicant: Daniel Lyle Callahan et al.

Serial No.: 10/615,011

Filed: July 8, 2003

Docket No.: 200308561-1

Title: FORCE DISTRIBUTING SPRING ELEMENT

IN THE CLAIMS

Please cancel claims 3-4, 6-7, 10-16, and 19 without prejudice.

1-19. (Canceled)

20. (Previously Presented) An electronic component system comprising:

a land grid array module;

a printed circuit board having a first side and a second side;

an interposer disposed between the module and the first side of the printed circuit board;

a backing plate spaced from, and disposed on the second side of the printed circuit board opposite the first side;

a plurality of posts extending through and connecting each of module, the printed circuit board, the interposer, and the backing plate relative to each other; and

a curved spring member disposed between the backing plate and the second side of the printed circuit board, and having a first portion in secured contact with the backing plate and a second portion in unsecured, pressing contact against the second side of the printed circuit board adjacent a center of the printed circuit board,

wherein the second portion of the spring member comprises a curved central body portion and wherein the backing plate includes a recessed portion defined in a main body of the backing plate that is configured to receive the first portion of the spring member.

21. (Previously Presented) The system of claim 20 wherein the recessed portion of the backing plate has a width less than a width of the main body of the backing plate and has a length less than a length of the main body of the backing plate, and the curved spring member is sized and shaped to be removably secured within the recessed portion of the backing plate.

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22. (Previously Presented) A method of distributing a contact force between a land grid array module and a printed circuit board, the method comprising:

securing the land grid array module to a first side of the printed circuit board via an interposer disposed on the first side of the printed circuit board and via a backing plate disposed on, and spaced from, a second side of the printed circuit board; and

biasing a curved spring member between the backing plate and the second side of the printed circuit board to insure a substantially uniform contact force across the module, the interposer, and the printed circuit board wherein a first portion of spring member is removably secured within a recess of the backing plate and a second portion of the spring member is biased in unsecured, pressing direct contact against the second side of the printed circuit board.

23. (Previously Presented) The method of claim 22 wherein securing the land grid array comprises:

extending at least one load post through each one of four corners of the land grid array module, the interposer, the printed circuit board, and the backing plate; and

introducing, with a load spring mounted on each one of the load posts, a compressive force between the land grid array module, the interposer, and the printed circuit board.

24. (Previously Presented) The method of claim 22 wherein biasing the spring member comprises:

using the spring member to provide substantially all of a compressive force exerted on the land grid array module, the interposer, and the printed circuit board.